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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/019,134	12/20/2001	Axel Heinrich	CL/V-31010A	1918

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EXAMINER

SAWHNEY, HARGOBIND S

ART UNIT	PAPER NUMBER
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2875

DATE MAILED: 08/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/019,134

Applicant(s)

HEINRICH ET AL.

Examiner

Hargobind S Sawhney

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. The amendment filed on February 19, 2003 has been entered. Accordingly, Claims 2 and 11 have been cancelled, and claims 1, 3-10 and 12-16 have been amended.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 3, 6 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin et al. (US Patent No. 6,220,845).

Regarding claims 1 and 16, Martin et al. ('845) discloses a UV illuminating device (Figure 3) for crosslinking biocompatible polymerizable material in order to produce an ophthalmic moulding in a casing mould of two mould halves (Figure 3, column 6, line 62-66, column 7, lines 39 and 46) comprising:

- a ultraviolet (UV) lamp(not shown, column 8, lines 30 and 31) remotely generating radiation, and the generated radiation being routed to the clamped mold halves and polymerizable material via fiber optics (column 8, lines 55-59).

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However, Martin et al. ('845) does not specifically teach the ultraviolet (UV) lamp being surrounded by a plurality of optical fibers.

It would have been an obvious to one having ordinary skill in the art at the time of invention to surround the UV lamp with proximal ends of a plurality of optical fibers – refer Figure 1 of Sopori (US Patent No. 5,217,285) - at for equal share of the generated radiation energy for uniform curing of each photo-curable lens.

Regarding Claim 3, Martin et al. ('845) further teaches the UV lamp being a mercury lamp (Figure 3, column 9, lines 5 and 6).

Regarding Claim 6, Martin et al. ('845) teaches the UV illuminating device comprising a mercury lamp as a UV light source 44 having emission spectrum of UV intensity at 320-390 nm (Figure 3, column 9, lines 5-8). However, Martin et al. ('845) does not teach the UV lamp operating at the claimed emission spectrum 280-360.

It would have been an obvious to one having ordinary skill in the art at the time of invention to modify the UV illumination system of Martin et al. ('845) for its operation at the emission spectrum of 280-360, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art.

4. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Martin et al. (US Patent No. 6,220,845) in view of Biller et al. (U.S. Patent No. 5,824,373).

Martin et al. ('845) teaches the UV illuminating device comprising a mercury lamp as a UV light source. However, Martin et al. ('845) does not teach the mercury lamp being a doped mercury lamp.

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On the other hand, Biller et al. ('373) discloses a radiation curing of powder coating with the UV radiation source (abstract, column 22, lines 17-20 and lines 29-33). Biller et al. ('373) additionally teaches the uses of doped mercury lamps (column 22, lines 29-33). This type of mercury lamps doped with metal halide is well known in the art for photo-polymerization process.

It would have been an obvious to one having ordinary skill in the art at the time of invention to modify the UV illumination system of Martin et al. ('845) by providing a doped mercury lamp for furnishing UV radiation energy as taught by Biller et al. ('373) for advantages and benefits including enhancement of particular wavelengths of the radiation source and its long operational life.

5. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Martin et al. (US Patent No. 6,220,845) in view of Nath (U.S. Patent No. 3,995,934).

Martin et al. ('845) teaches the UV illuminating device comprising a mercury lamp as a UV light source coupled to optical fibers. However, Martin et al. ('845) does not specifically teach the optical fibers being liquid optical fibers.

On the other hand, Nath ('934) discloses a flexible liquid light guide –optical fiber 10- (Figures 1 and 2) applied for light, including UV radiation, transmission, filled with light transmitting fluid 20 (Figures 1 and 2, column 2, lines 10 and 11).

It would have been an obvious to one having ordinary skill in the art at the time of invention to modify the UV illumination system of Martin et al. ('845) by providing liquid optical fibers for light transmission as taught by Nath ('934) for advantages and benefits of efficient UV – high powered light transmission for long period of time..

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6. Claims 7,8 and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin et al. (US Patent No. 6,220,845) in view of Kennedy et al. (U.S. Patent No. 5,521,392).

Regarding claims 7,8 and 12-14, teaches the UV illuminating device comprising a remotely generated polymerization radiation and routed via fiber optic system (Figure 3, column 8, lines 55-59). However, Martin et al. ('845) does not teach the detailed of the disclosed UV radiation system including:

- an UV radiation measuring unit;
- a sensor measuring the radiation intensity of the UV lamp, and being connected to the UV radiation regulating unit;
- a diaphragm positioned between the optical fiber and the UV lamp of the device;
- the diaphragm further including an aperture being adjusted by a stepping motor unit; and
- the aperture of the diaphragm being controlled in accordance of the measurement of intensity of the emitted UV radiation.

On the other hand, regarding claims 7,8 and 12-14, Kennedy et al. ('392) discloses a light curing system (Figure 2) with a control module 20 operationally coupled to the components including:

- a sensor 18 (Figures 1 and 2, column 3, lines 1-3, and column 5, lines 1-4) measuring the radiation intensity of the UV lamp 12 (Figures 1 and 2, column 3, lines 1-3; and column 4, lines 54 and 55), and being connected

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- to the UV radiation regulating unit 20 (Figures 1 and 2, column 3, lines 1-3; and column 5, lines 1-4);
- an UV radiation measuring unit 14 (Figures 1 and 2, column 3, lines 1 and 2, and column 4, lines 27, 28 and 36-39);
 - a diaphragm 54 (Figures 1 and 2, column 4, line 28) positioned between the optical fiber 16 (Figures 1 and 2, column 3, line 3) and the UV lamp 12 of the device;
 - the diaphragm 54 further including an aperture (Not shown) being adjusted by a solenoid 60 (Figure 2, column 4, lines 29-32), functionally equivalent as a stepping motor unit 58 (Figure 2, column 4, lines 29-32); and
 - the aperture of the diaphragm 54 being controlled in accordance of the measurement of intensity of the emitted UV radiation (Figure 2, column 4, lines 36-41).

Thus, regarding claims 7, 8 and 12-14, it would have been obvious to one having ordinary skill in the art at the time of invention to modify the UV illumination system of Martin et al. ('845) by providing a control module as taught by Kennedy et al. ('392) for advantages and benefits of producing a preselected amount and intensity of UV light energy needed for photo curing of polymerizable material.

7. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Martin et al. (US Patent No. 6,220,845) in view of Sopori (US Patent No. 5,217,285).

Regarding Claim 15, dependent on Claim 1, Martin et al. ('845) does not teach a UV condenser being positioned between the optical fiber and the upper mould half.

On the other hand, Sopori ('285) teaches an illuminating apparatus emitting UV light, and comprising a condenser 30 (Figure 1, column 6, line 68; column 7, lines 1 and 2; and column 9, lines 35-39) positioned between the optical fiber 48 (Figure 1, column 9, lines 29 and 30) and a surface receiving UV light 42 (Figure 1).

it would have been an obvious to one having ordinary skill in the art at the time of invention to modify the UV illumination system of Martin et al. ('845) by providing a condenser to collimate UV light for benefits and advantages of uniform distribution of UV light needed for even curing of the lens.

Response to Amendment

8. Applicant's arguments filed on February 19, 2002 with respect to 35 U.S.C. 102(b) rejection of claims 1 and 2 and 35 U.S.C. 103(a) rejection of Claim 3 have been fully considered but are moot in view of the new ground(s) of rejections.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the

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examiner should be directed to Hargobind S Sawhney whose telephone number is 703-306-5909. The examiner can normally be reached on 6:15 - 2:45.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on 703-305-4939. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318/7724 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-2956.

HSS

8/7/003


Stephen Husar
Primary Examiner